

AMENDMENTS TO THE CLAIMS:

The listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1-36. (Cancelled)

37. (New) A cylindrically shaped balloon expandable stent configured for use in a coronary artery, comprising:

a plurality of independently expandable and interconnected cylindrical elements formed of an alloy containing cobalt, chromium, molybdenum, and nickel and generally aligned along a common longitudinal axis; and

the stent has a first low profile configuration for delivery and a second radially expanded configuration and is plastically deformable from the first low profile delivery configuration to the second radially expanded configuration, the second radially expanded configuration having a diameter suitable to hold open the coronary artery;

wherein the cylindrical elements of the stent are elastically incompressible to the first low profile delivery configuration without plastic deformation and have an elasticity insufficient to allow expansion from the first low profile delivery configuration to the second radially expanded configuration without plastic deformation.

38. (New) The intracorporeal stent of claim 37 wherein the alloy contains about 28% to about 65% cobalt.

39. (New) The intracorporeal stent of claim 37 wherein the alloy contains less than about 40% nickel.

40. (New) The intracorporeal stent of claim 37 wherein the alloy contains about 5% to about 35% chromium.

41. (New) The intracorporeal stent of claim 37 wherein the alloy contains up to about 15% molybdenum.

42. (New) The intracorporeal stent of claim 37 wherein the alloy further comprises up to about 20% iron.

43. (New) The intracorporeal stent of claim 37 further comprising a plurality of independently expandable cylindrical elements which are interconnected so as to be generally aligned on a common axis.

44. (New) A cylindrically shaped balloon expandable stent configured for use in a coronary artery, comprising:

a plurality of independently expandable and interconnected cylindrical elements generally aligned along a common longitudinal axis and formed from metallic alloy tubular member containing cobalt, chromium, and molybdenum; and

the stent has a first low profile configuration for delivery and a second radially expanded configuration and is plastically deformable from the first low profile delivery configuration to the second radially expanded configuration, the second radially expanded configuration having a diameter suitable to hold open the coronary artery.

45. (New) The intracorporeal member of claim 44 wherein the alloy contains cobalt in an amount of about 28% to about 65%.

46. (New) The intracorporeal member of claim 44 wherein the alloy further comprises nickel as an alloying element in an amount of less than about 40%.

47. (New) The intracorporeal member of claim 44 wherein the alloy contains chromium in an amount of about 5% to about 35%.

48. (New) The intracorporeal member of claim 44 wherein the alloy contains molybdenum in an amount of up to about 15%.

49. (New) The intracorporeal member of claim 44 wherein the alloy further comprises iron in an amount of up to about 20%.

50. (New) The intracorporeal stent of claim 44 wherein the alloy contains about 2 weight percent nickel.

51. (New) A cylindrically shaped balloon expandable stent configured for use in a coronary artery, comprising:

a plurality of independently expandable and interconnected cylindrical elements formed of a metallic alloy containing cobalt, chromium, molybdenum and nickel, the cylindrical elements having a transverse dimension of about 0.003 inch and generally aligned along a common longitudinal axis; and

the stent has first low profile configuration for delivery and a second radially expanded configuration and is plastically deformable from the first low profile delivery configuration to the second radially expanded configuration, the second radially expanded configuration having a diameter suitable to hold open the coronary artery;

wherein the cylindrical elements of the stent have an elasticity insufficient to allow expansion from the first low profile delivery configuration to the second radially expanded configuration without plastic deformation so as to be permanent.

52. (New) A cylindrically shaped balloon-expandable stent for use in a coronary artery, comprising:

an interior chamber configured to receive an expandable member for plastically expanding the stent from a first low profile delivery configuration to a second radially expanded configuration, the second radially expanded configuration having a diameter suitable to hold open the coronary artery; and

the stent having a plurality of independently expandable and interconnected cylindrical elements, each cylindrical element formed from tubular member of an alloy containing cobalt, chromium, molybdenum and nickel, the cylindrical elements having a transverse dimension of about 0.003 inch and generally aligned along a common longitudinal axis.

53. (New) A cylindrically shaped balloon-expandable stent configured for use in a coronary artery, comprising:

a plurality of independently expandable and interconnected cylindrical elements formed of an alloy containing cobalt, chromium, molybdenum, and nickel and generally aligned along a common longitudinal axis; and

the stent has a first low profile configuration for delivery and a second radially expandable configuration and is plastically deformable from the first low profile delivery configuration to the second radially expanded configuration, the second radially expanded configuration having a diameter suitable to hold open the coronary artery;

wherein the cylindrical elements of the stent have an elasticity insufficient to allow expansion from the first low profile delivery configuration to the second radially expanded configuration without plastic deformation so as to be permanent, and the cylindrical elements having an undulating component.

54. (New) The stent of claim 53, wherein the undulating component has an electrochemically polished metallic surface.

55. (New) The stent of claim 54, further comprising a biocompatible coating on the electrochemically polished metallic surface of the cylindrical elements.

56. (New) The stent of claim 53, wherein the alloy contains about 28 to about 65 weight percent cobalt, about 5 to about 35 weight percent chromium, about 2 to about 40 weight percent nickel.

57. (New) The stent of claim 56, wherein the alloy further contains molybdenum up to about 15 weight percent.

58. (New) The stent of claim 53, wherein the alloy further contains molybdenum up to about 15 weight percent.

59. (New) The stent of claim 53, wherein at least one of the cylindrical elements has an undulating component out of phase with the undulating component of at least another one of the cylindrical elements.

60. (New) The stent of claim 53, wherein the cross-section of the undulating component of the cylindrical element has an aspect ratio of about one to one.

61. (New) The stent of claim 53, wherein the cross-section of the undulating component of the cylindrical element has a height-to-width aspect ratio of about two-to-one.

62. (New) A stent, comprising:
a plurality of independently expandable and interconnected cylindrical elements formed of an alloy containing about 28 to about 65 weight percent cobalt, about 5 to about 35 weight percent chromium, about 2 to about 40 weight percent nickel, and one element from the group consisting of molybdenum and tungsten;

the cylindrical elements being generally aligned along a common longitudinal axis; and

the cylindrical elements having an undulating component which has an electrochemically polished metallic surface;

wherein the stent is plastically deformable from a first low profile delivery configuration to a second radially expanded configuration having a diameter suitable to hold open the coronary artery.

63. (New) The stent of claim 62, wherein at least one of the cylindrical elements has an undulating component out of phase with the undulating component of at least another one of the cylindrical elements.

64. (New) The stent of claim 62, wherein the cross-section of the undulating component of the cylindrical element has an aspect ratio of about one to one.

65. (New) The stent of claim 62, wherein the cross-section of the undulating component of the cylindrical element has a height-to-width aspect ratio of about two-to-one.

66. (New) A stent, comprising:
a plurality of independently expandable and interconnected cylindrical elements formed of an alloy containing about 28 to about 65 weight percent cobalt, about 5 to about 35 weight percent chromium, about 2 to about 40 weight percent nickel, and an amount of molybdenum up to about 15 weight percent;

the cylindrical elements being generally aligned along a common longitudinal axis;; and

the cylindrical elements having an undulating component which has an electrochemically polished metallic surface; and

wherein the stent is plastically deformable from a first low profile delivery configuration to a second radially expanded configuration having a diameter suitable to hold open the coronary artery.

67. (New) The stent of claim 66, wherein at least one of the cylindrical elements has an undulating component out of phase with the undulating component of at least another one of the cylindrical elements.

68. (New) The stent of claim 66, wherein the alloy has been cold-worked.

69. (New) The stent of claim 66, wherein the alloy has been age hardened.

70. (New) The stent of claim 66, wherein the cross-section of the undulating component of the cylindrical element has an aspect ratio of about one to one.

71. (New) The stent of claim 66, wherein the cross-section of the undulating component of the cylindrical element has a height-to-width aspect ratio of about two-to-one.

72. (New) The stent of claim 37, wherein the cylindrical elements have an undulating component with a cross-section having an aspect ratio of about one to one.

73. (New) The stent of claim 37, wherein the cylindrical elements have an undulating component with a cross-section having a height-to-width aspect ratio of about two-to-one.

74. (New) The stent of claim 37, wherein the cylindrical elements have an undulating component with a cross-section having a height-to-width aspect ratio of about two-to-one to about 0.5-to-one.

75. (New) The stent of claim 37, wherein the cylindrical elements have an electrochemically polished metallic surface.

76. (New) The stent of claim 74, wherein the alloy has been cold-worked and age hardened.

77. (New) A cylindrically shaped balloon-expandable stent configured for use in a coronary artery, comprising

a plurality of independently expandable and interconnected cylindrical elements generally aligned along a common longitudinal axis and formed of an alloy containing cobalt, chromium, molybdenum, and nickel;

the cylindrical elements having an undulating component with an electrochemically polished metallic surface;

a biocompatible coating on the electrochemically polished metallic surface of the cylindrical elements; and

the stent is plastically deformable from a first low profile configuration to a second radially expanded configuration having a diameter suitable to hold open the coronary artery;

wherein the cylindrical elements of the stent have an elasticity insufficient to allow expansion from the first low profile configuration to the second radially expanded configuration without plastic deformation so as to be permanent.

78. (New) The intracorporeal member of claim 44 further comprising undulations being plastically expandable in a blood vessel for deployment therein.

79. (New) The intracorporeal member of claim 78 wherein the tubular member has a reticulated tubular structure having bounded openings for blood perfusion.

80. (New) The intracorporeal member of claim 79 wherein the reticulated tubular structure has a continuum body made from tubing.

81. (New) The intracorporeal member of claim 80 wherein the stent has electrochemically polished tubular internal and external surfaces.

82. (New) A cylindrically shaped balloon expandable stent configured for use in a coronary artery, comprising:

a plurality of independently expandable and interconnected cylindrical elements, the cylindrical elements generally aligned along a common longitudinal axis and formed from metallic alloy containing cobalt, chromium, and molybdenum;

undulations that are plastically expandable in a blood vessel for deployment therein;

the stent having electrochemically polished tubular internal and external surfaces and a reticulated tubular structure having bounded openings for blood perfusion, the reticulated tubular structure having a continuum body made from tubing; and

the stent has a first low profile configuration for delivery and a second radially expanded configuration and is plastically deformable from the first low profile delivery configuration to the second radially expanded configuration, the second radially expanded configuration having a diameter suitable to hold open the coronary artery.

83. (New) A cylindrically shaped balloon expandable stent configured for use in a coronary artery, comprising:

a plurality of independently expandable and interconnected cylindrical elements formed of an alloy containing cobalt, chromium, molybdenum, and nickel and generally aligned along a common longitudinal axis; and

the stent has a first low profile configuration for delivery and a second radially expanded configuration and is plastically deformable from the first low profile delivery configuration to the second radially expanded configuration, the second radially expanded configuration having a diameter suitable to hold open the coronary artery;

wherein the stent is formed from a tubular alloy and has a smaller unexpanded diameter before plastic expansion and an expanded diameter upon plastic expansion.

84. (New) A cylindrically shaped balloon expandable stent configured for use in a vessel, comprising:

a plurality of independently expandable and interconnected cylindrical elements formed of an alloy containing cobalt, chromium, molybdenum, and nickel and generally aligned along a common longitudinal axis; and

the stent has a first low profile configuration for delivery and a second radially expanded configuration and is plastically deformable from the first low profile delivery configuration to the second radially expanded configuration, the second radially expanded configuration having a diameter suitable to hold open the vessel;

wherein the stent is formed by cutting voids from a member having a surface and a thickness to form a stent having integrally interconnected struts, the stent being plastically deformable inside a vessel from an unexpanded diameter to an expanded diameter to hold open the vessel.

85. (New) A stent as defined in claim 84, wherein said member having a surface and a thickness to form a stent is tubular